

Impacts of Annual Bromes on Livestock Grazing

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USDA-ARS

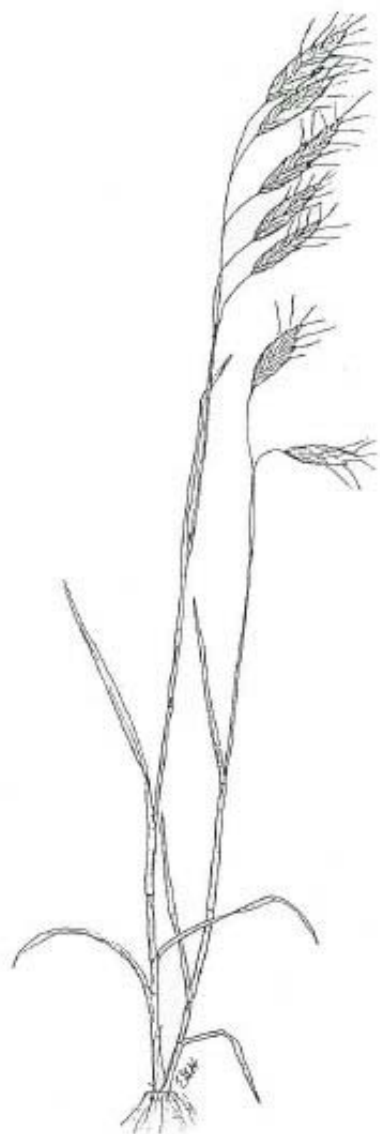
Fort Keogh Livestock and Range

Research Laboratory

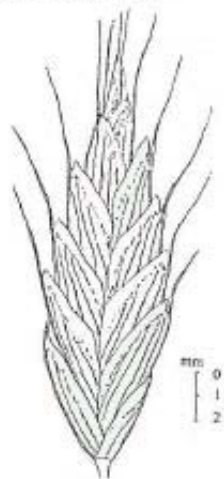
Miles City, Montana



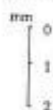




Bromus japonicus



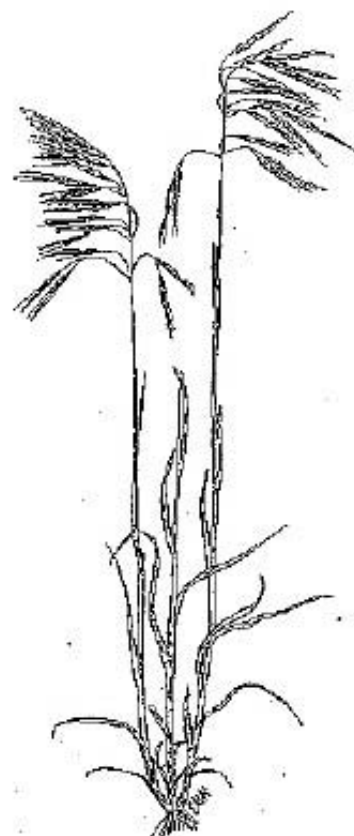
Spikelet



Lemma
(dorsal view)



Lemma
(ventral view)



Bromus tectorum



Spikelet

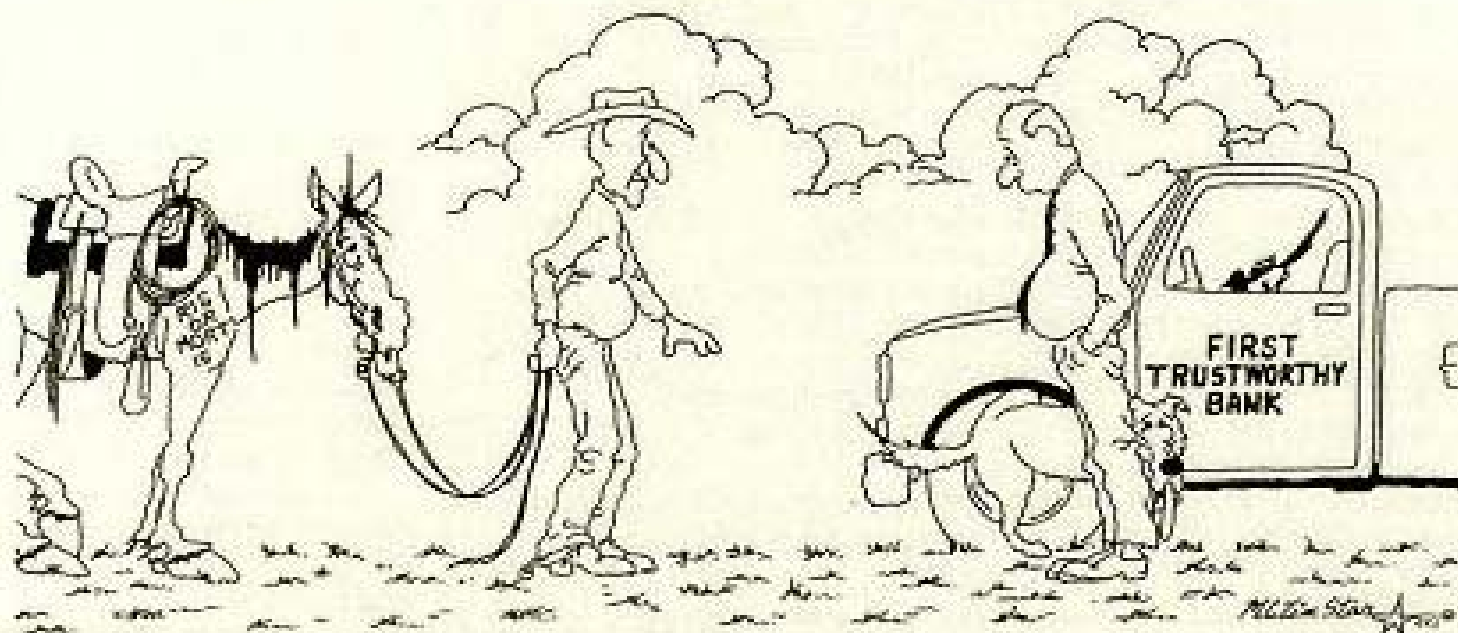


Lemma
(dorsal view)



Lemma
(ventral view)

EARL...



"THIS IS NOT CHEAT GRASS...IT'S JAPANESE BROME!"

Laid-Back West Syndicate



Research Findings from Fort Keogh, Miles City, MT

**Studies have been conducted on
annual bromes since the early
1980s.**

Forage Production of Annual Bromes

Erratic

**Amount dependent upon amount
and distribution of precipitation,
temperature, soil N, etc.**

Ungrazed spring forage yield at Fort Keogh.

Year	Species groups				
	Grasses			Forbs	Total
	W. wheatgrass	Annual	Other		
	S. bluegrass				
----- (pounds/acre) -----					
1983	239	343	210	104	922
1984	170	301	60	27	573
1985	196	170	52	52	480
1986	581	183	74	89	950
1987	434	236	59	69	816
1988	246	23	53	36	364
1989	382	373	51	57	822
1990	468	452	60	51	1,057
1991	310	632	33	19	994
1992	267	242	32	20	560
1993	302	126	79	75	608
1994	522	28	97	46	695
1995	433	117	79	82	740

Impact on Vegetation

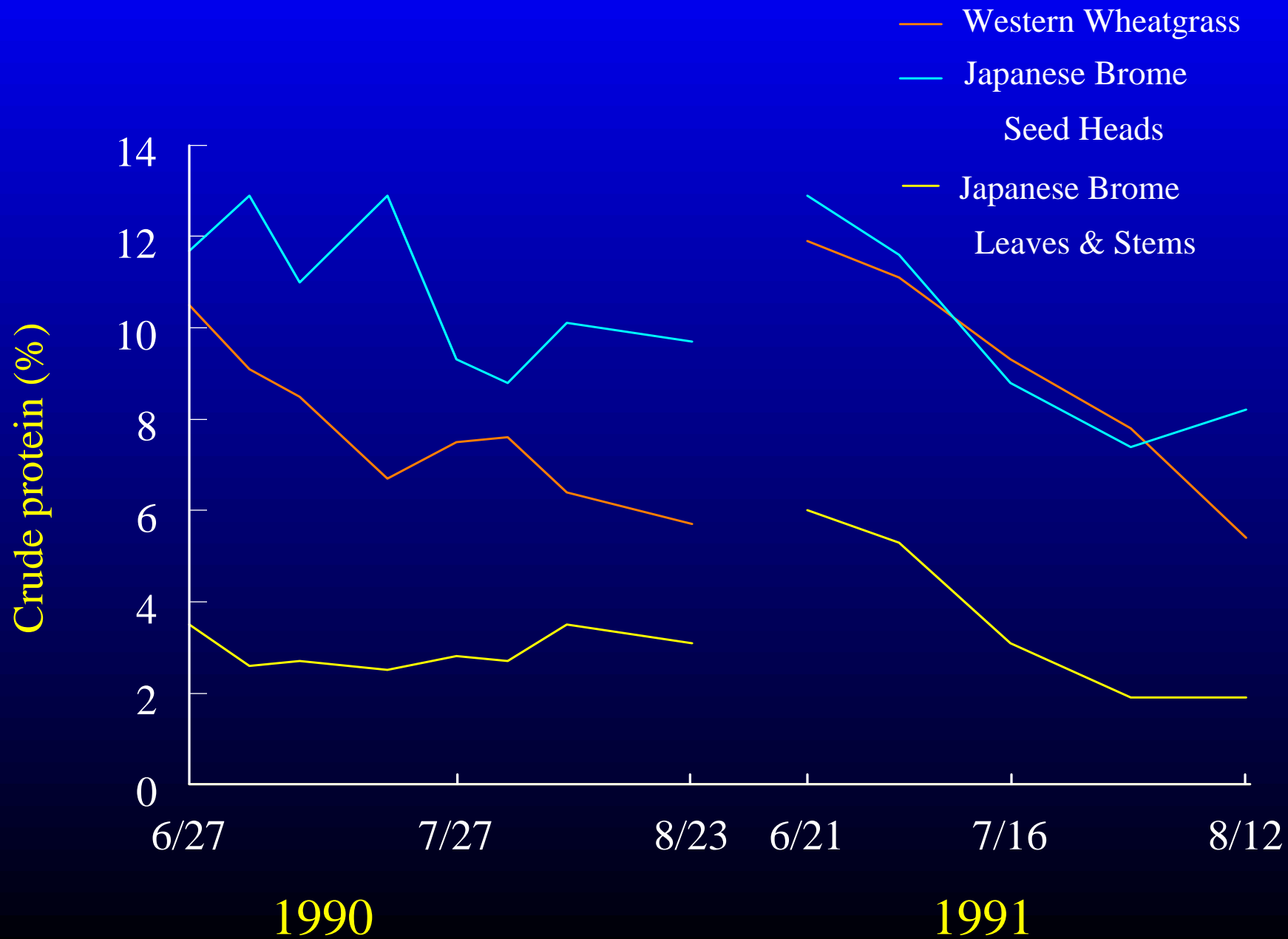
Annual brome can have a negative impact on western wheatgrass an important perennial species.

Biomass for western wheatgrass, Japanese brome, other plant species, western wheatgrass + other plant species, and total vegetation in experimental plots at Fort Keogh averaged across 6 site-year combinations.

Treatment	Japanese	Western	Other	Total
	brome	wheatgrass	species	
	----- (pounds/acre) -----			
Brome present	632	796	245	1,592
Brome removed	11	978	238	1,227

Impact of Annual Bromes on Forage Quality

Bromes can affect forage quality on rangelands due to their early spring growth and early maturation relative to perennial species.



**Impact on Vegetation and
Livestock Production when
Annual Bromes are Suppressed
with Atrazine**

Vegetation Changes

Decreased forage production of annual grasses and total vegetation.

Increased forage nutritive value of western wheatgrass and Japanese brome.

Responses varied with changing environmental conditions both within and across years.

Livestock Response

Steer average daily gains during the May to September grazing period were increased *0.3 pounds/head/day* or increased from *2.0 to 2.3* by brome suppression, and gains per acre were increased from *62 to 72 pounds/acre*.

Variation across years did not seem to affect this relationship.

Steer Diets

Brome suppression decreased percentage of annual grasses in the diet from *14 to 10%*.

The dietary proportion of other perennial grass species was reduced by brome suppression in May and August, but not June or July.

With brome suppression, much of the dietary annual grasses were replaced by western wheatgrass.

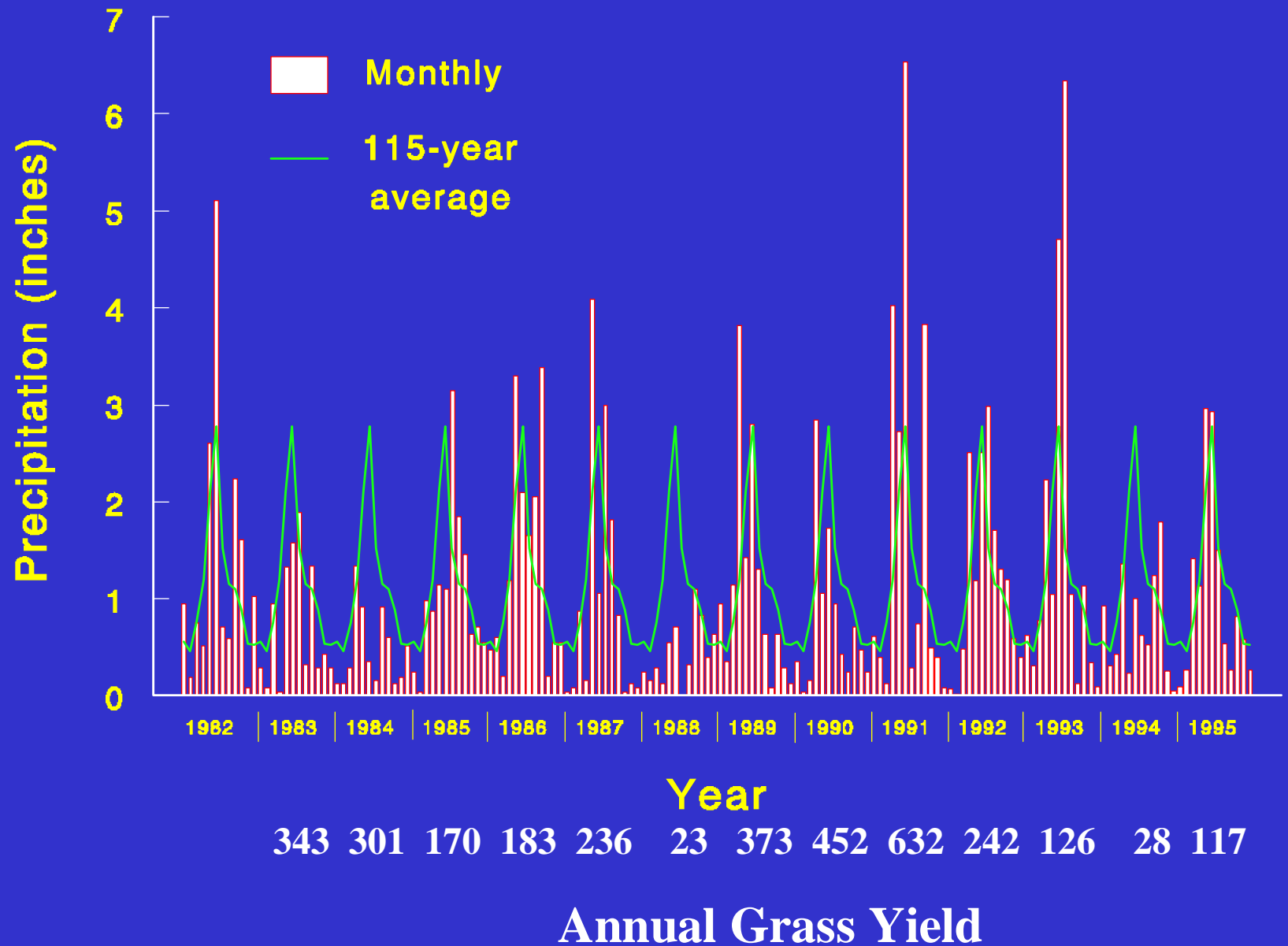
There was also some replacement by forbs and blue grama at various times, but specific replacement depended upon year and month.

Do you have a problem with annual brome??

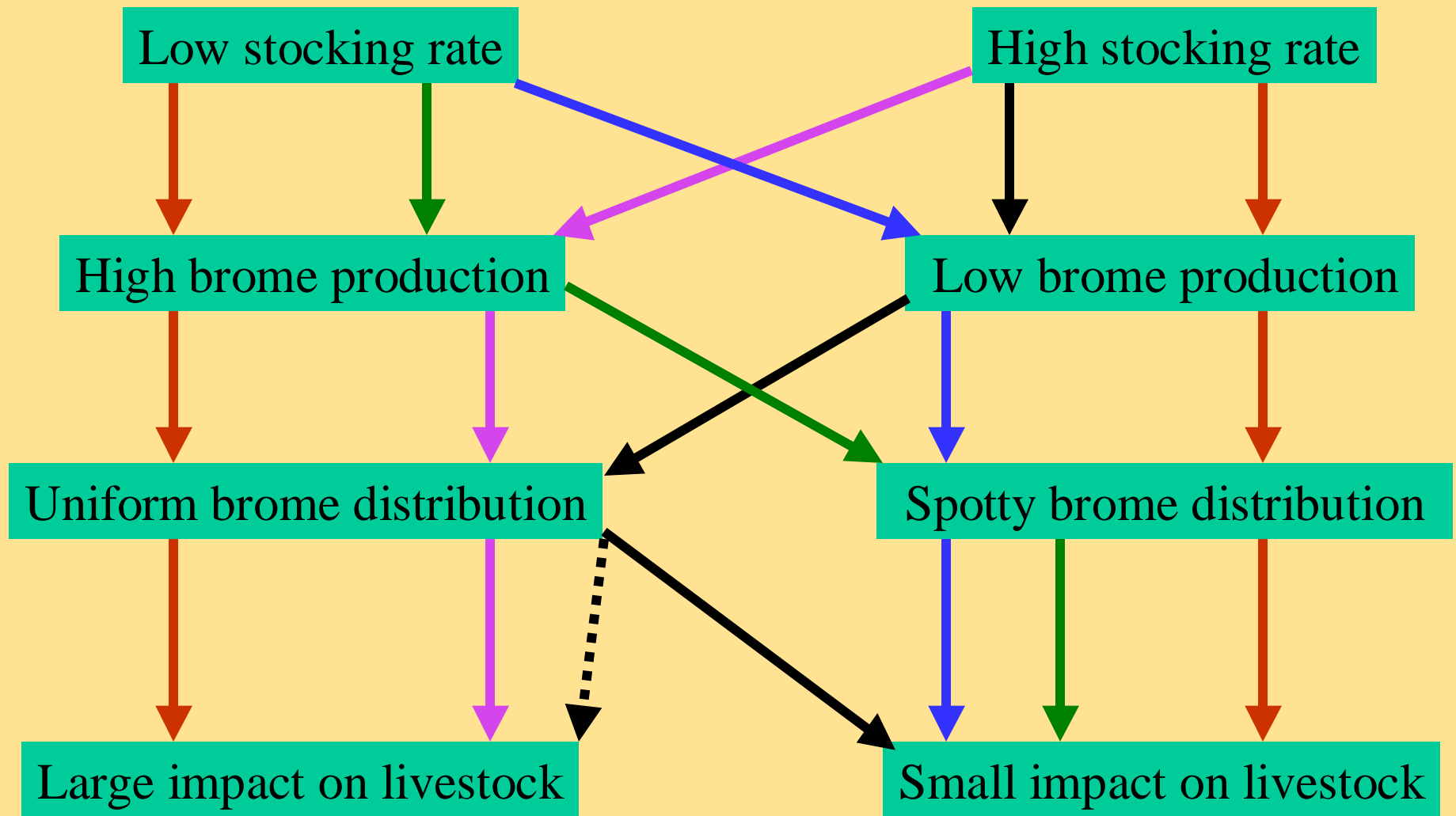
At this point some may be saying “**so what,**” annual brome provides large amounts of spring forage for my livestock.

You need to again ask if this forage is available every year.





Factors Affecting Annual Brome Influence on Livestock



Best Grazing Practice

Grazed early spring for best livestock gains and to reduce annual brome seed production and reduce mulch or litter

Remove animals when soil water remains to allow growth of perennials

Greatest challenge to control – being able to graze adequately during the relative narrow window in early spring when you can have the greatest negative impact on annual bromes

Clipping Japanese Brome Plants



Above- and below-ground biomass for Japanese brome

